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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
HOOK, JAMES F

ART UNIT	PAPER NUMBER
3754	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/584,713	BALTES ET AL.	
	Examiner	Art Unit	
	James F. Hook	3754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 February 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Based upon the arguments set forth in the response of February 16, 2010, the previous office action has been vacated and the finality of the rejection removed. The following is a new rejection based upon new prior art. This action is non-final.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 11 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Peters. The reference to Peters discloses the recited pressure accumulator for dampening pulses comprising an accumulator housing 1, having a gas space C' and a fluid space C where fluid would extend down into a bellows shaped separating element 8 supported at one end by the housing and connected at the other end to a piston 9 which is movably located in the housing, the gas and fluid spaces are sealed from one another which in light of the disclosure of fairly high pressures that are kept by the gas as well as the fluid would

inherently mean there would be a fluid and liquid tight seal, a definable volumetric portion of a working gas 11 and a liquid 10 fill the gas space where the liquid is alcohol. The reference to Peters shows ends to the housing which are considered a cover part, and such are part of the housing.

The reference to Peters discloses that the bellows is sealed which as stated above is considered to be inherently fluid and gas tight, however, should it be argued that this would not be the case then it would only require routine skill in the art to modify Peters to be fluid and gas tight. It would have been obvious to one skilled in the art to make the bellows fluid and gas tight as such would require only routine skill in the art and one skilled in the art would find it obvious that in order to insure the proper balance in the gas chamber with regards to pressure verses the pressure of the fluid that a leakage of either would disrupt this balance and cause the accumulator to fail, and therefore one skilled in the art would use routine experimentation to correct this by making the seal fluid and gas tight to prevent failure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 12-15 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters in view of Itatani. The reference to Peters further discloses heating of the

liquid in the gas space by heating element 6 thereby teaching a thermal control of the liquid and gas temperature to control the proper equilibrium. The reference to Peters fails to disclose specifically what type of alcohol could be used for this purpose, when heat is applied to the liquid in an accumulation setting when the amount of gas and liquid is of importance. The reference to Itatani discloses that it is old and well known in the art to utilized ethylene glycol as a form of alcohol used in an accumulation system when it is important to control the liquid with respect to heat as it relates to a gas. It would have been obvious to one skilled in the art to modify the alcohol in Peters to be specifically ethylene glycol as suggested by Itatani where such is a known equivalent form of alcohol used in a system for accumulation where the liquid is heated and the amount of liquid and gas are controlled by the heat, where such is a material that would provide benefits over other alcohols depending upon the needs of the user.

With respect to the use of the accumulator in Peters for diesel fuel or heavy oil, such is considered merely intended use where Peters is not specific on what types of fluids are used with the accumulator and the accumulator of Peters would be capable of use with any fluid as such is merely intended use. Peters also teaches connections to a fluid source and out again via 5,5' where segment 12 is considered an anti chamber through which the fluid is provided and removed from the accumulator structure, and the combination of 12,5,5' creates a pipe union. With respect to the piston having a cavity facing the fluid space holding additional fluid, the piston 9 of Peters is seen to be curved toward the fluid space, however, having the curve facing away from the fluid source thereby creating a cavity inside of the curved portion that faces the fluid space is

considered merely a reversal of parts where it would have been obvious to one skilled in the art to use routine skill to reverse a part as such would require nothing more than routine skill in the art and experimentation to arrive at the proper orientation that would maximize fluid space.

Claims 16, 17, 21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters in view of Niikura. The reference to Peters discloses all of the recited structure with the exception of forming the piston large enough so that it is guided by the housing, having the gas and liquid inside of the bellows, and forming the bellows of metal. The reference to Niikura discloses the recited pressure accumulator or pulsation dampener comprising a housing 15, a piston 35, a bellows 17, two working chambers 45 which is a gas chamber and a liquid chamber inside the bellows, which is sealed in a gastight manner inherently, fluid connections for the working fluid are provided by 21,22, which can be an oil where the use of heavy oil is merely intended use, there is a channel formed around the piston between the piston and the wall capable of holding a fluid, the piston is moveably guided in the housing for a distance which can be included into one end of the housing which is considered the cap, a stop 55 is provided to stop prevents the contact of the piston with an inside wall 36 of the accumulator where such is attached to a cover part of the housing, the bellows are metal with a plurality of folds, both fluid connections are connected to an antechamber inside portion 16 of the housing, and the gap or groove between the piston portion and the wall is an annular gap between the gas chamber and the bellows member. It would

have been obvious to one skilled in the art to modify the bellows of Peters to be formed of metal and to form the piston so that it is guided by the housing as suggested by Niikura as metal is a known material that can be used for a bellows structure when used with a gas and fluid where metal is inherently more resilient and by forming the piston to be guided by the housing would insure that the piston moved in a known path and did not go off center in the housing thereby putting undue stress on the bellows which would lead to failure of the bellows structure, where such is known equivalent structure to one skilled in the art of accumulators.

Forming the bellows such that the liquid and gas were within the bellows only requires a routine reversal of parts to change the orientation of the bellows structure so that the gas was within the bellows rather than outside of it as such would only require routine skill in the art and experimentation to reverse the orientation of a known part.

Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters in view of Itatani as applied to claims 12-15 and 22 above, and further in view of Niikura. The reference to Peters as modified discloses all of the recited structure with the exception of providing a piston part that comprises a stop. It would have been obvious to one skilled in the art to modify the piston of Peters to have a stop provided thereon as suggested by Niikura where such would prevent the bellows from extending too far and thereby prevent damage to the bellows.

Claims 12-15 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters in view of Allen. The reference to Peters further discloses heating of the liquid in the gas space by heating element 6 thereby teaching a thermal control of the liquid and gas temperature to control the proper equilibrium. The reference to Peters fails to disclose specifically what type of alcohol could be used for this purpose, when heat is applied to the liquid in an accumulation setting when the amount of gas and liquid is of importance. The reference to Allen discloses the recited accumulator structure comprising a bladder member having a gas space 44, an oil chamber 58 for the working fluid, and ethylene glycol is in space 46 to prevent the gas from mixing in with the oil in chamber 58 thereby forming a barrier. It would have been obvious to one skilled in the art to modify the accumulator in Peters by using a specific type of alcohol such as ethylene glycol in the gas chamber with the gas as such is a known type of alcohol used in accumulator structures that have gas and oil chambers as suggested by Allen where such is a known type of alcohol used in accumulators when an additional liquid is used in a gas/fluid accumulator system.

With respect to the use of the accumulator in Peters for diesel fuel or heavy oil, such is considered merely intended use where Peters is not specific on what types of fluids are used with the accumulator and the accumulator of Peters would be capable of use with any fluid as such is merely intended use. However, Allen also discloses that it is old and known to use accumulator structures using gas and fluid can be used with an additional liquid and the fluid can be oil, thereby teaching it is old and well known to use accumulators of the type in Peters with oils. Peters also teaches connections to a fluid

source and out again via 5,5' where segment 12 is considered an anti chamber through which the fluid is provided and removed from the accumulator structure, and the combination of 12,5,5' creates a pipe union. With respect to the piston having a cavity facing the fluid space holding additional fluid, the piston 9 of Peters is seen to be curved toward the fluid space, however, having the curve facing away from the fluid source thereby creating a cavity inside of the curved portion that faces the fluid space is considered merely a reversal of parts where it would have been obvious to one skilled in the art to use routine skill to reverse a part as such would require nothing more than routine skill in the art and experimentation to arrive at the proper orientation that would maximize fluid space.

Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters in view of Allen as applied to claims 12-15 and 22 above, and further in view of Niikura. The reference to Peters as modified discloses all of the recited structure with the exception of providing a piston part that comprises a stop. It would have been obvious to one skilled in the art to modify the piston of Peters to have a stop provided thereon as suggested by Niikura where such would prevent the bellows from extending too far and thereby prevent damage to the bellows.

Claims 11-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niikura in view of Allen and Alaze. The reference to Niikura discloses the recited pressure accumulator or pulsation dampener comprising a housing 15, a piston 35, a

bellows 17, two working chambers 45 which is a gas chamber and a liquid chamber inside the bellows, which is sealed in a gastight manner inherently, fluid connections for the working fluid are provided by 21,22, which can be an oil where the use of heavy oil is merely intended use, there is a channel formed around the piston between the piston and the wall capable of holding a fluid, the piston is moveably guided in the housing for a distance which can be included into one end of the housing which is considered the cap, a stop 55 is provided to stop prevents the contact of the piston with an inside wall 36 of the accumulator where such is attached to a cover part of the housing, the bellows are metal with a plurality of folds, both fluid connections are connected to an antechamber inside portion 16 of the housing, and the gap or groove between the piston portion and the wall is an annular gap between the gas chamber and the bellows member. The reference to Niikura discloses all of the recited structure with the exception of providing alcohol to the accumulator structure in the gas space, specifically ethylene glycol. It would have been obvious to one skilled in the art to modify the accumulator in Niikura by providing alcohol in the gas chamber as suggested by Peters where such allows for better control of the pressure difference and allows for better accumulation of larger pulses as stated in Peters. The use of ethylene glycol as the alcohol is merely a choice of mechanical expedients where it would have been obvious to one skilled in the art to use any type of known alcohol where only routine experimentation would be required to arrive at a type of alcohol which would be safest to use with an accumulator used for oil as such is merely a choice of mechanical expedients.

Response to Arguments

Applicant's arguments with respect to claims 11-23 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James F. Hook whose telephone number is (571) 272-4903. The examiner can normally be reached on Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on (571) 272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James F. Hook/
Primary Examiner, Art Unit 3754

JFH